



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/569,203	02/23/2006	Yoshifumi Takeyama	03500.1032665.	1721
5514 7590 01/06/2010 FITZPATRICK CELLA HARPER & SCINTO 1290 Avenue of the Americas NEW YORK, NY 10104-3800				
EXAMINER				
TRINH, THANH TRUC				
ART UNIT		PAPER NUMBER		
1795				
MAIL DATE		DELIVERY MODE		
01/06/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/569,203

Applicant(s)

TAKEYAMA, YOSHIFUMI

Examiner

THANH-TRUC TRINH

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/22)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 11-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention

Claim 11 recites the limitations “a first transparent-electrode-layer-removed portion in which the transparent electrode layer is not present” in lines 8-9, and “a second transparent-electrode-layer-removed portion in which the transparent electrode layer is not present” in lines 11-12. The metes and bounds of the limitations cannot be determined. It is unclear what exactly “transparent-electrode-layer-removed portion in which the transparent electrode layer is not present”, for instant, open space, air, solid layer, metal layer, etc... For the purpose of this office action, the limitations will be treated as any portions that do not contain the transparent electrode.

Claims 12-17 are rejected on the same ground as claim 11.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 11-17 are rejected under 35 U.S.C. 102(b) as being anticipated by
Tsuzuki et al. (US Patent 5667596).

Regarding claim 11, as seen in Figures 2a-3b, Tsuzuki et al. discloses a
photovoltaic element comprising

- a metal substrate (see conductive base plate of solar cell 200 in Figures 2a-2b or solar cell 300 in Figures 3a-3b, col. 6 lines 27-36, col. 7 lines 5-21, and examples 1-4);
- photovoltaic layer (see semiconductor layer in col. 7 lines 5-21 and 40-58, or p-i-n layers of silicon in table 1) provided on the metal substrate (see col. 7 lines 5-21 and table 1) ;
- transparent electrode layer provided on the photovoltaic layer (see col. 7 lines 5-21, col. 7 line 60 through col. 8 line 11, table 1); and
- rear surface side bus-bar electrode (see copper foil 203 in Figure 2b or 303 in Figure 3; examples 3-4) having a portion welded to a non-light-receiving surface of the metal surface (e.g. as the copper foil is attached to the conductive base plate by ultrasonic welding, see col. 4 lines 51-58, solar cell module C of example 4) for electrical connecting the rear surface side bus-bar electrode to the metal substrate,
- a first transparent-electrode-layer removed portion in which the transparent electrode layer is not present (see etching lines 201 in Figure 2a or 301 in Figure 3a, examples 2-3) is provided at an outer periphery

(e.g. etching lines 201 or 301 on the right, left or bottom of solar cells 200 and 300) of the metal substrate (e.g. the conductive base plate in Figures 2a-3b), and

- a second transparent-electrode-layer removed portion in which the transparent electrode layer is not present (see a portion above conductive base plate and underneath copper foil 202 in Figure 2a, or a portion above conductive base plate and underneath copper foil 302 in Figure 3a) is provided in a region (e.g. light receiving surface) to which the welded portion of the rear surface side bus-bar electrode is opposed (e.g. as copper foil 202 or 302 is on the light receiving surface and the welded portion on the non-light receiving surface of the conductive base plate, see examples 1-4), with the metal substrate disposed between the said region (e.g. light receiving surface) and the welded portion (e.g. non-light receiving surface).

Regarding claim 12, the first transparent-electrode-layer-removed-portion (e.g. etching lines 201 in Figure 2a or 301 in Figure 3a) and the second transparent-electrode-layer-removed-portions (e.g. a portion above conductive base plate and underneath copper foil 202 in Figure 2a, or a portion above conductive base plate and underneath copper foil 302 in Figure 3a) of Tsuzuki et al. are separate from each other (e.g. one is etching lines at the right, left and bottom of the solar cells as seen in Figures 2a and 3a, while the other is underneath the copper foil at the top of the solar cell).

Regarding claim 13, the first transparent-electrode-layer-removed-portion (e.g. etching lines 201 in Figure 2a or 301 in Figure 3a) and the second transparent-electrode-layer-removed-ports (e.g. a portion above conductive base plate and underneath copper foil 202 in Figure 2a, or a portion above the conductive base plate and underneath copper foil 302 in Figure 3a) of Tsuzuki et al. are integrated with each other (e.g. via the metal substrate or the conductive base plate, see Figures 2a-3b)

Regarding claim 14, Tsuzuki et al. further discloses a current-collecting electrode (see collecting electrodes 204 and silver dots 205 in Figure 2a, or 304 and 305 in Figure 3a) for collecting power generated in the photovoltaic layer through the transparent electrode (e.g. upper electrode or transparent electrode, see col. 7 lines 5-21, col. 7 line 60 through col. 8 line 11) is disposed on the second transparent electrode-layer-removed-portion (e.g. a top portion of conductive base plate on the receiving side and underneath copper foil 202 in Figure 2a or 302 in Figure 3a), with an insulating member (see insulating tape of polyimide, see col. 9 lines 29-35) disposed between the current-collecting electrode (e.g. 204 and 205 in Figure 2a, or 304 and 305 in Figure 3a) and the second transparent-electrode-layer-removed portion (e.g. as the insulating tape polyimide is disposed between cell surface and the copper foil, see col. 9 lines 29-35).

Regarding claim 15, Tsuzuki et al. further discloses a plurality of current-collecting electrodes (see collecting electrodes 204 with silver dots 205 in Figure 2a, or 304 and 305 in Figure 3a) for collecting power generated in the photovoltaic layer is provided on the transparent electrode layer (e.g. upper electrode, see col. 7 lines 5-21), and the second transparent-electrode layer-removed portion (e.g. portion of copper foil

202 between two silver dots 205 in Figure 2a, or portion of copper foil 302 between two silver dots 305 in Figure 3a) is provided between the plurality of current-collecting electrodes.

Regarding claim 16, Tsuzuki et al. further discloses a plurality of current-collecting electrodes (e.g. 204 and 205 in Figure 2a, 304 and 305 in Figure 3a) for collecting power generated in the photovoltaic layer through the transparent electrode layer and a bus-bar electrode (see the whole copper foil 202 in Figure 2a, 302 in Figure 3a) for collecting power from the plurality of current-collecting electrodes.

Regarding claim 17, as seen in Figures 2a-3b, Tsuzuki et al. further discloses a photovoltaic element module having a plurality of photovoltaic elements connected to each other by an electrical connection (e.g. 206 in Figure 2a, 306 in Figure 3a) of the bus bar electrode (e.g. 202 in Figure 2a, 302 in Figure 3a) of one of the photovoltaic element and the rear surface side bus-bar electrode (e.g. 203 in Figure 2b, or 303 in figure 3b) of another photovoltaic element.

Response to Arguments

5. Applicant's arguments with respect to claims 11-17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **THANH-TRUC TRINH** whose telephone number is (571)272-6594. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on 571-272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TT
12/23/2009

/Basia Ridley/
Supervisory Patent Examiner, Art Unit 1795